

AMENDMENTS TO THE CLAIMS

1. (Cancelled)

2. (Currently Amended) ~~The sensor of claim 1 and further comprising A sensor comprising:~~
an insulating jacket having a hole that extends through the insulating jacket;
an imaging structure located completely in the hole, the imaging structure
converting photons into an electrical signal; and
an outer metal shell that fits around and contacts the insulating jacket.

3. (Currently Amended) ~~The sensor of claim 2 wherein the imaging structure includes: an imager that collects photon information; and a plurality of wires that carry the photon information and extend out of the hole and further comprising a conductor located in the hole, the conductor being connected to the imaging structure, and extending out of the hole.~~

4. (Currently Amended) ~~The sensor of claim 2 wherein the imaging structure includes: A sensor comprising:~~
an insulating jacket having a hole that longitudinally extends through a portion of the insulating jacket;
an imaging structure located in the hole, the imaging structure including:
 an imager that collects photon information;
 a wiring substrate connected to the imager;
 a plurality of wires connected to the wiring substrate that carry photon information and extend out of the hole; and
 a rigid structure that contacts the wiring substrate; and
an outer metal shell that fits around and contacts the insulating jacket.

5. (Currently Amended) The sensor of claim 3 wherein the imager imaging structure includes a color imaging cell.

6. (Original) The sensor of claim 5 wherein the color imaging cell includes a vertical color imaging cell.

7. (Currently Amended) The sensor of claim 3 wherein the imager imaging structure includes a black and white imaging cell.

8. (Original) The sensor of claim 2 wherein the insulating jacket further includes a channel that longitudinally extends through the insulating jacket.

9. (Currently Amended) The sensor of claim 3 8 and further comprising a conductive electrode having a first end and a spaced apart second end located in the channel, and

wherein the outer metal shell has a tip that curves up and around to be directly over the first end of the conductive center electrode such that a tip an end of the tip is spaced apart from the first end of the conductive center electrode by a gap.

10. (Original) The sensor of claim 2 wherein the hole has an L-shape.

11. (Original) The sensor of claim 2 wherein the hole is substantially straight, and has an end region and a middle region that is wider than the end region.

12. (Currently Amended) The sensor of claim 9 wherein the hole has an L-shape and an opening that lies adjacent to the first end of the conductive center electrode.

13. (Original) The sensor of claim 9 wherein the hole has a first opening and a spaced apart second opening that lie on opposite sides of an engine wall.

Claims 14-20 (Cancelled)

21. (New) The sensor of claim 3 wherein the conductor carries the electrical signal.

22. (New) The sensor of claim 4 wherein the imager includes a color imaging cell.

23. (New) The sensor of claim 22 wherein the color imaging cell includes a vertical color imaging cell.

24. (New) The sensor of claim 4 wherein the imager includes a black and white imaging cell.

25. (New) The sensor of claim 4 wherein the insulating jacket further includes a channel that longitudinally extends through the insulating jacket.

26. (New) The sensor of claim 25 and further comprising a conductive electrode having a first end and a spaced apart second end located in the channel, and

wherein the outer metal shell has a tip that curves up and around to be directly over the first end of the conductive electrode such that an end of the tip is spaced apart from the first end of the conductive electrode by a gap.

27. (New) The sensor of claim 4 wherein the hole has an L-shape.
28. (New) The sensor of claim 4 wherein the hole is substantially straight, and has an end region and a middle region that is wider than the end region.